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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/665,992

09/19/2003

Yi-Shung Chaug

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05/16/2006

EXAMINER

CHAN, SING P

HOWREY LLP

C/O IP DOCKETING DEPARTMENT

2941 FAIRVIEW PARK DRIVE, SUITE 200 & 300

FALLS CHURCH, VA 22042-2924

ART UNIT

PAPER NUMBER

1734

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/665,992	Applicant(s) CHAUG ET AL.	
	Examiner Sing P. Chan	Art Unit 1734	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-57 is/are pending in the application.
- 4a) Of the above claim(s) 5,12,13,15-17,19-32,36-41,45,49 and 52-57 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-4,6-11,14,18,33-44, 46-48,50 and 51 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>11/16/05&12/30/05</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Double Patenting

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 1-4, 6-11, 14, 18, 33-35, 42-44, 46-48, 50, and 51 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-4, 6-11, 14, 18, 32, 34, 35, 50-56, 58, and 60 of copending Application No. 10/666,912. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims of the copending application recited the same limitation as the instant application. However, the claims of the copending application do not recite "the substrate and the patterned thin film design formed thereon are suitable for use as an in-mold decoration (IMD) decorated film." But, the recitation of "the substrate and the patterned thin film design formed thereon are suitable for use as an in-mold decoration (IMD) decorated film" is intended used and only required that the substrate as form by the copending application be capable of

being used as an in-mold decoration film, which the substrate as recited by the claims of the copending application is capable of being used as an in-mold decoration film.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 9 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5. A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. See MPEP § 2173.05(c). Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte*

Hasche, 86 USPQ 481 (Bd. App. 1949). In the present instance, claim 9 recites the broad recitation "further comprises" as a transitional phase for the composition of the strippable material, and claim 1 recites, "consisting essentially of" as a transitional phase for the composition which is the narrower statement of the range/limitation.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-4, 6-11, 14, 18, 33, and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakagawa et al (U.S. 4,643,912) in view of Shor et al (U.S. 5,310,778).

Nakagawa et al discloses a method of forming a metal layer with pattern on a substrate. The method includes providing sheet of plastic such as polycarbonate, providing an ink containing a binder and a pigment (Col 2, lines 35-45), screen printing the ink onto the substrate (Col 2, lines 58-59) with a negative pattern (Col 2, lines 14-22), applying the a metal layer, i.e. film, onto the printed substrate by sputtering (Col 2, lines 60-61) to form a positive pattern (Col 2, lines 14-15), immersing the substrate in solvent such as n-hexane or water to remove the ink layer with the metal layer thereon (Col 4, lines 8-24) with the positive metal pattern remained on the substrate, which is conductive. The substrate with the conductive pattern is capable of being used as an in-mold decoration decorated film, which satisfies the requirement of intended use as

recited by the claim. Nakagawa et al is silent as to the composition of the ink containing 5-80% or 10-60% by weight of a re-dispersible particulate, i.e. pigment. However, providing an ink composition, which is water soluble, with a composition of 5-80% or 10-60% by weight of an organic or inorganic pigment is well known and conventional as shown for example by Shor et al. Shor et al discloses a method of forming ink. The method includes providing pigments such as organic or inorganic pigment in the amount of up to 30% for organic pigments and up to 75% for inorganic pigments (Col 2, lines 58-54 and Col 3, lines 21-31), providing a polymeric dispersant with polymer such as alkyl acrylic or methacrylic acid ester and amine substituted acrylic or methacrylic acid ester monomers to serve to bind with the pigment (Col 3, lines 34-44, Col 3, lines 51-54), which are soluble in an aqueous carrier medium, i.e. water organic co-solvents (Col 3, lines 58-63 and Col 5, lines 55-62) and other ingredient such as surfactants (Col 6, lines 14-22).

It would have obvious to one of ordinary skill in the art at the time the invention was made to provide an ink composition with a polymeric dispersant to serve as a binder, organic or inorganic pigment of up to 30% for organic pigment or up to 75% for inorganic pigment as disclosed by Shor et al in the method of Nakagawa et al to provide an ink composition to prevent flocculation and settling. (See Shor et al, Col 1, lines 30-35)

8. Claims 34 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakagawa et al (U.S. 4,643,912) in view of Shor et al (U.S. 5,310,778) as applied to claim 33 above, and further in view of Todd et al (U.S. 5,368,902).

Nakagawa et al as modified above is silent as to the forming process is a roll-to-roll process. However, forming patterned thin film using a roll-to-roll process is well known and conventional as shown for example by Todd et al. Todd et al discloses a method of forming patterned thin film. The method includes providing substrate in roll and unwinding and rewinding the rolled substrate to forming the patterned thin film. (Col 3, lines 24-36)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the substrate on a roll and forming the thin film by a roll-to-roll process as disclosed by Todd et al in the method of Nakagawa et al as modified by Shor et al to provide an patterned thin film economically. (See Todd et al, Col 1, lines 33-35)

9. Claim 36 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nakagawa et al (U.S. 4,643,912) in view of Shor et al (U.S. 5,310,778) as applied to claim 1 above, and further in view of Nakagiri et al (U.S. 4,078,935).

Nakagawa et al as modified above discloses the substrate includes plastic films such as polycarbonates, polyacrylates and polyphenylene (See Nakagawa et al, Col 2, lines 35-39), but is silent as to the substrate is polyethylene terephthalate (PET) film. However, providing PET as the substrate is well known and conventional as shown for example by Nakagiri et al. Nakagiri discloses a support member, i.e. a substrate for conductive metal. Support member includes material such as polyester such as polyethylene terephthalate (PET), polyolefins such as polyethylene, and polycarbonate. (Col 7, lines 3-13)

It would have been obvious to one ordinary skill in the art at the time the invention was made to provide the substrate comprising PET as disclosed by Nakagiri in the method of Nakagawa et al as modified by Shor et al, which are all equivalents.

10. Claims 37-39 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakagawa et al (U.S. 4,643,912) in view of Shor et al (U.S. 5,310,778) and Nakagiri et al (U.S. 4,078,935) as applied to claims 36 and 40 above, and further in view of Nakamura et al (U.S. 5,795,527).

Regarding claims 37 and 41, Nakagawa et al as modified above is silent as to the substrate includes a release agent and a durable layer. However, providing a substrate with a release agent and a durable layer is well known and conventional as shown for example by Nakamura et al. Nakamura et al discloses a method of forming a decorated article. The method includes providing a base film, a release layer, i.e. a release agent, a hard coat layer, i.e. durable layer. (Col 4, lines 11-16)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide a substrate with a base film, a release agent, and a hard coat layer as disclosed by Nakamura et al in the method of Nakagawa et al as modified by combination of references to provide the coating with abrasion resistance (Col 4, lines 50-59) and inherent oil resistant.

Regarding claim 38, Nakagawa et al discloses the substrate is printed with printing ink. (Col 2, lines 14-23)

Regarding claim 39, Nakagawa et al as modified above is silent as to the decorative film includes an adhesive layer. However, providing an adhesive layer on a

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decorative film is well known and conventional as shown for example by Nakamura et al. Nakamura et al discloses an adhesive layer integrally formed on the surface of the in-mold transfer. (Col 4, lines 12-16)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide an adhesive layer on the substrate as disclosed by Nakamura et al in the method of Nakagawa et al as modified by combination to provide means for bonding the metallic reinforcing layer to a to-be-decorated object molded from resin. (See Nakamura et al, Col 2, lines 31-33)

11. Claim 50 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nakagawa et al (U.S. 4,643,912) in view of Shor et al (U.S. 5,310,778) and Brummett et al (U.S. 4,368,281).

Nakagawa et al discloses a method of forming a metal layer with pattern on a substrate. The method includes providing sheet of plastic such as polycarbonate, providing an ink containing a binder and a pigment (Col 2, lines 35-45), screen printing the ink onto the substrate (Col 2, lines 58-59) with a negative pattern (Col 2, lines 14-22), applying the a metal layer, i.e. film, onto the printed substrate by sputtering (Col 2, lines 60-61) to form a positive pattern (Col 2, lines 14-15), immersing the substrate in solvent such as n-hexane or water to remove the ink layer with the metal layer thereon (Col 4, lines 8-24) with the positive metal pattern remained on the substrate, which is conductive. The substrate with the conductive pattern is capable of being used as an in-mold decoration decorated film, which satisfies the requirement of intended use as recited by the claim. Nakagawa et al is silent as to the composition of the ink containing

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5-80% or 10-60% by weight of a re-dispersible particulate, i.e. pigment. However, providing an ink composition, which is water soluble, with a composition of 5-80% or 10-60% by weight of an organic or inorganic pigment is well known and conventional as shown for example by Shor et al. Shor et al discloses a method of forming ink. The method includes providing pigments such as organic or inorganic pigment in the amount of up to 30% for organic pigments and up to 75% for inorganic pigments (Col 2, lines 58-54 and Col 3, lines 21-31), providing a polymeric dispersant with polymer such as alky acrylic or methacrylic acid ester and amine substituted acrylic or methacrylic acid ester monomers to serve to bind with the pigment (Col 3, lines 34-44, Col 3, lines 51-54), which are soluble in an aqueous carrier medium, i.e. water organic co-solvents (Col 3, lines 58-63 and Col 5, lines 55-62) and other ingredient such as surfactants (Col 6, lines 14-22).

It would have obvious to one of ordinary skill in the art at the time the invention was made to provide an ink composition with a polymeric dispersant to serve as a binder, organic or inorganic pigment of up to 30% for organic pigment or up to 75% for inorganic pigment as disclosed by Shor et al in the method of Nakagawa et al to provide an ink composition to prevent flocculation and settling. (See Shor et al, Col 1, lines 30-35) Nakagawa et al as modified by Shor et al is silent as to the pattern is applied to both surfaces of the substrate. However, applying pattern to one or both surfaces of the substrate is well known and conventional as shown for example by Brummett et al. Brummett et al discloses printing the pattern to one or both side of the substrate for forming pattern. (Col 5, lines 39-49)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide pattern on one or both surfaces of the substrate as disclosed by Brummett et al in the method of Nakagawa et al as modified by Shor et al as either one or both surface are all equivalents.

12. Claim 51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakagawa et al (U.S. 4,643,912) in view of Shor et al (U.S. 5,310,778) as applied to claim 1 further in view of Brummett et al (U.S. 4,368,281).

Nakagawa et al as modified above is silent as to the pattern is applied to both surfaces of the substrate. However, applying pattern to one or both surfaces of the substrate is well known and conventional as shown for example by Brummett et al. Brummett et al discloses printing the pattern to one or both side of the substrate for forming pattern. (Col 5, lines 39-49)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide pattern on one or both surfaces of the substrate as disclosed by Brummett et al in the method of Nakagawa et al as modified by Shor et al as either one or both surface are all equivalents.

Allowable Subject Matter

13. Claims 42-44 and 46-48 would be allowable if a terminal disclaimer is filed to overcome the rejection(s) under obviousness-type double patenting, set forth in this Office action.

The following is an examiner's statement of reasons for allowance: The claims recite methods of forming a patterned thin film structure on a substrate. The method includes printing on the substrate with a first material a pattern defining a positive image of a decorative design with first material being strippable using a first solvent, overcoating the printed surface of the substrate with a second material that is not strippable using a first solvent, stripping the first material away using the first solvent in a process that strip away the first material and the second material formed on the first material without stripping away the second material formed directly on the substrate and remain on the substrate, which form a negative image, depositing a thin film material on the patterned substrate and stripping to remove the second material to form the thin film structure in the shape of the decorative design. Aufderheide discloses a method of forming patterned layers onto substrates. The method includes printing a pattern of strippable undercoating, with the undercoating comprising a 15-90% water soluble film forming polymer, a 5-80% solubility accelerator, 5 to 80% by weight solid particulate material (Col 15, lines 1-3), onto a substrate (Col 4, lines 15-20 and Col 4, lines 37-40), depositing a metal layer onto the coated substrate (Col 4, lines 47-60), washing the coating and the metal layer adhering to the coating off with water (Col 4, lines 61-66) and forming a conductive pattern on the substrate (Col 5, lines 6-11). The substrate with the conductive pattern is capable of being used as an in-mold decoration decorated film, which satisfies the requirement of intended use as recited by the claim. Aufderheide is silent as to providing a second material not strippable with a first solvent, overcoating the first material with the second material, stripping the first material with

the first solvent without stripping the second from the substrate, then deposit a thin film onto the patterned substrate and stripping the second material. Hubsch et al (U.S. 4,119,483) discloses a method of structuring thin layers. The method includes applying a photolacquer layer onto a substrate, depositing SiO₂ layer and aluminum layer onto the photolacquer, removing the photolacquer to provide the substrate with double layer of supporting layer, SiO₂, and aluminum layers and further layers are provided by repeating the process. (Col 4, lines 3-30) Hubsch et al is silent as to providing a second material not strippable with a first solvent, overcoating the first material with the second material, stripping the first material with the first solvent without stripping the second from the substrate, then deposit a thin film onto the patterned substrate and stripping the second material. Furthermore, the recitation of "consisting essentially of" for the strippable composition excluded material such as the solubility accelerator as required in Aufderheide. A search of the prior art of record did disclose reference or references in combination with the recited features.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Response to Arguments

14. Applicant's arguments, see Page 16, lines 7-32, filed February 22, 2006, with respect to claims 42-44 have been fully considered and are persuasive. The rejection of 35 USC 102(b) has been withdrawn.

15. Applicant's arguments with respect to claims 1-4, 6-11, 14, 18, 33-41, 50, and 51 are have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

16. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

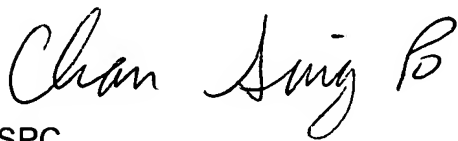
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sing P. Chan whose telephone number is 571-272-1225. The examiner can normally be reached on Monday-Thursday 7:30AM-11:00AM and 12:00PM-4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christopher A. Fiorilla can be reached on 571-272-1187. The fax phone

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number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



SPC



CHRIS FIORILLA
SUPERVISORY PATENT EXAMINER

AU 1734